ForeRunner ES-3810
Ethernet Workgroup Switch
Release Notes

Software Version 4.2.0

MANU0146-05
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1.0 Purpose of Software Release

These release notes highlight the new features associated with the 4.2.0 release of the *ForeRunner* ES-3810 Ethernet Workgroup Switch.

2.0 Supported Operating Systems, Architectures, Hardware

2.1 MON960 Requirements

Software version 4.2.0 is supported only on the ES-3810. This version of software requires the use of Bootstrap Monitor software version 4.0.2. You cannot run operational software version 4.2.0 unless you are running MON960 software version 4.0.2.

If necessary, please contact FORE Systems Technical Support for instructions to upgrade MON960 software (see Section 10.0).

If operational software version 4.0.2 or higher is already installed on the ES-3810, then the MON960 upgrade is not necessary. The MON960 upgrade is only necessary if you are upgrading from operational software version 4.0.1 or earlier.

The MON960 software should be upgraded before the operational software on the ES-3810.

2.2 Memory Requirements

Operational software version 4.2.0 requires eight megabytes of DRAM (instead of four) on the Network Management Module (NMM). If a currently installed ES-3810 is to be upgraded from software version 4.1.0 or less to version 4.2.0, an additional SIMM must be installed. Instructions for performing this memory upgrade are included with the upgrade kit (NMM-UPG).

CAUTION

An NMM with 4 MB of DRAM will not boot with software version 4.2.0 (or higher).

The MIB supported within V4.2.0 includes support for the Entity MIB, RFC 2037, as detailed below. However, this MIB is only supported with the new chassis (FORE Part Number ES-3810/CH).

3.0 New Features from 4.1.1 Release

The following features, implemented in the 4.1.1 maintenance release of ES-3810 operational software, are included in software version 4.2.0:

- Telnet Support
- Auto-negotiated UNI 3.0/3.1 Support
- Password Protection
- Enhanced TFTP Support
- Redundant Chassis
- FEM-8A/TX Support
- ESM-12/Fl Support
- Persistent Storage Restoration

3.1 Telnet Support

The 4.1.1 release includes single-session Telnet support to provide remote access to the ES-3810. Telnet support is single session only and causes the console to be redirected (i.e., only a telnet session or a local console session can be active at any one time, not both). For information about configuring Telnet parameters, see "Telnet Configuration" on page 8.

3.2 Auto-negotiated UNI 3.0/3.1 Support

The 4.1.1 release includes support for auto-negotiated ATM Forum UNI 3.0/UNI 3.1 signalling. The ES-3810 supports auto-negotiation with its link partner and is capable of negotiating both upward and downward (i.e., the ES-3810 will signal according to UNI 3.1 if the switch partner is utilizing UNI 3.1, or the ES-3810 will fall back to UNI 3.0 if its switch partner is utilizing UNI 3.0).

3.3 Password Protection

When logging on to the ES-3810, a username is required. The default usernames are as follows:

public Grants read only privileges to objects that are accessible through the ES-3810's local management console (e.g., port counters can be viewed, but port parameters can not be changed).

private Grants read/write privileges to all managed objects that are accessible through the ES-3810's local management console.

Logging on as `private` requires the use of a password. The default password is `fore`.

Usernames and passwords can be changed from the ES-3810 console. See "Manage Access Control List Menu," in Chapter 6 of the *ForeRunner ES-3810 Configuration Manual*, for more information.

Only users with read/write access can change usernames and passwords.

3.4 Enhanced TFTP Support

The 4.1.1 release supports a new algorithm for TFTP downloads. This new algorithm does not delete the current operational software image until the firmware download has been verified as successful. This new algorithm eliminates the need for serial downloads, unless a TFTP server is unavailable. The new algorithm is as follows:

1. The TFTP download is initiated
2. The existing (currently active) image is copied to DRAM
3. Flash memory is erased
4. The new image is downloaded to Flash memory
5. If the download is successful, the ES-3810 automatically reboots using the new image and the old image is erased from DRAM. If the download fails, the "old" image is restored from DRAM to Flash and the ES-3810 automatically reboots using the old image.

See Section 9.0, "Software Upgrade Procedures," for more information about TFTP software upgrades.

3.5 Redundant Chassis

The new ES-3810 chassis (ES-3810/CH) supports redundant, hot-swappable, load-sharing power supplies. Each supply utilizes its own power cord, allowing for separate electrical connections, and each supply can be easily added to or removed from the ES-3810 while the chassis receives power from a second supply. For information about adding/removing power supplies, see page 6.

With redundant power supplies installed, a single power supply failure on the ES-3810 will not cause the switch to stop functioning.

WARNING!

DO NOT attempt to add or remove a power supply that is connected to an electrical outlet. Failure to follow this warning may result in equipment damage or operator injury. See Section 7.0 for more information.

3.6 FEM-8A/TX Support

The 4.1.1 release includes support for the FEM-8A/TX, a full-width, eight-port, autosensing 10/100 Mbps add-on module to the ES-3810. The FEM-8A/TX operates and is managed in the same way as the two-port FEMs. Each port on the FEM-8A/TX implements Part U of the 802.3 specification.

CAUTION

Only two FEM-8A/TX modules can be safely installed in the single power supply ES-3810 chassis (ES-3810) at one time. Installing more than two modules may surpass the power and cooling capacity of the switch.

If the application requires three modules, then the dual power supply chassis should be used. This chassis can power and cool any module configuration with only one power supply installed (refer to Section 5.2).

3.7 ESM-12/Fl Support

The 4.1.1 release includes support for the ESM-12/Fl, a full-width, 12-port, 10 Mbps per port add-on module to the ES-3810. The ESM-12/Fl operates and is managed in the same way as the ESM-16 and ESM-24, except that it utilizes fiber media and ST connectors. Each port on the module implements the standard fiber optic connection of the 802.3 specification.

3.8 Persistent Storage Restoration

The 4.1.1 release implements a new persistent storage algorithm. If a new module is added to the ES-3810 chassis, previously saved configuration data (e.g., port parameters, VLAN definitions) is restored (if the new module is the same type as the one previously occupying the slot, or if the new module resides in a previously empty slot). Conversely, if removed, a module's last-saved configuration data is stored and used later when the slot is filled by a module of the same type (as described earlier).

Replacing a module with one of a different type is not supported. In this case, all settings are reset to factory defaults.

4.0 New Features in 4.2.0 Release

- FSM-8/TX Segment Switch Module Support
- SSM-16 Segment Switch Module Support
- Increased MAC Address Support

4.1 FSM-8/TX Segment Switch Module Support

The 4.2.0 release includes support for the FSM-8/TX, a full-width, eight-port, autosensing 10/100 Mbps segment switch module for the ES-3810. The FSM-8/TX operates and is managed in the same way as the FEM-8A/TX.

CAUTION

Only two FSM-8/TX modules can be safely installed in the single power supply ES-3810 chassis (ES-3810) at one time. Installing more than two modules may surpass the power and cooling capacity of the switch.

If the application requires three modules, then the dual power supply chassis should be used. This chassis can power and cool any module configuration with only one power supply installed (refer to Section 5.2).

4.2 SSM-16 Segment Switch Module Support

The 4.2.0 release includes support for the SSM-16, a full-width, 16-port, 10 Mbps segment switch module for the ES-3810. The SSM-16 operates and is managed in the same way as the ESM-16 and ESM-24.

4.3 Increased MAC Address Support

Installing the segment switch modules increases the number of MAC addresses supported on the ES-3810. The maximum number of MAC addresses is 8,192, and these can be attached to a single port or divided among all ports.

5.0 Known Issues or Concerns

5.1 Using the Default LECS Address

When joining an ELAN, only the default LECS address that is provided can be used. Using any other LECS address will not work.

5.2 FSM-8/TX Limitations

- **No more than two** FSM-8/TX modules can be installed at the same time in the single power supply ES-3810 (80 watt) chassis.
- Up to three FSM-8/TX modules can be installed at the same time in the dual power supply ES-3810 (110 watt) chassis.

6.0 Password Protected Logon

When logging on to the ES-3810, a username is required. The default usernames are as follows:

public Grants read only privileges to objects that are accessible through the ES-3810's local management console (e.g., port counters can be viewed, but port parameters can not be changed).

private Grants read/write privileges to all managed objects that are accessible through the ES-3810's local management console.

NOTE Logging on as `private` requires the use of a password. The default password is `fore`.

Usernames and passwords can be changed from the ES-3810 console. See "Manage Access Control List Menu," in Chapter 6 of the *ForeRunner ES-3810 Configuration Manual*, for more information.

NOTE Only users with read/write access can change usernames and passwords.

7.0 Power Supply Removal/Replacement

WARNING!

DO NOT attempt to remove/replace a power supply module without reading this section. Serious injury to the user or damage to the equipment may result if proper replacement procedures are not followed.

DO NOT attempt to add or remove a power supply that is connected to an electrical outlet. Failure to follow this warning may result in equipment damage or operator injury.

It is highly recommended that you use a grounding strap when handling this or any other component.

NOTE You will need a Phillips screwdriver to perform the procedures in Section 7.1 and Section 7.2.

7.1 Removing a Power Supply

The procedure for removing an ES-3810 power supply is as follows:

WARNING!

Failure to perform Step 1 can result in serious injury to the user or damage to the equipment.

1. Flip the power switch of the supply being removed to the OFF position.
2. Unplug and remove the power cord from the supply being removed (remove the power cord from both the power supply and the AC source).
3. Remove and retain the two Phillips screws near the top of the power supply or slot cover being removed.
4. Turn the two thumbscrews, on the supply or cover being removed, to the left until they spin loosely (you may need to use a Phillips screwdriver to loosen the thumbscrews).
5. Pull on the thumbscrews to unseat the power supply or slot cover and remove it from the chassis.

7.2 Adding or Replacing a Power Supply

The procedure for adding an ES-3810 power supply is as follows:

WARNING!

Failure to perform Step 1 can result in serious injury to the user or damage to the equipment.

1. Remove the old supply or slot cover according to the instructions in Section 7.1.
2. Carefully align the new power supply in the empty slot and push on the center of its face-plate to slide it back into the enclosure.
3. Press firmly to seat the power supply and tighten the two thumbscrews to secure it in the chassis.
4. To ensure maximum safety and to ensure that the connectors have been seated properly, tighten the two thumbscrews using a Phillips screwdriver.
5. Insert and tighten the two Phillips screws in the holes near the top of the power supply.
6. Connect the power cord to the new supply in the ES-3810 chassis and plug the cord into an approved electrical outlet.
7. Flip the power switch on the new supply to the ON position.

8.0 Telnet Configuration

To configure Telnet parameters on the ES-3810, log on via the management console and select option 7, “Manage Telnet,” from the ES-3810 Main Menu.

8.1 Viewing Telnet Parameters

To view the ES-3810’s current Telnet configuration, select option 2, “View Telnet Parameters,” from the Manage Telnet Menu. The parameters are as follows:

Telnet Logon — Indicates whether or not Telnet logon to the ES-3810 is enabled. `Enabled` indicates that the ES-3810 can be reached via telnet (using the correct IP address). `Disabled` indicates that the ES-3810 can not be reached via Telnet.

Telnet Timeout — Indicates the current timeout setting for the ES-3810. The timeout parameter (entered in `days hours:minutes:seconds`) indicates the amount of “idle” time allowed before which the ES-3810 will terminate a Telnet session.

For example, if the timeout value is set to `000 00:05:00` (five minutes), a Telnet session to the ES-3810 will be terminated after five minutes of inactivity.

8.2 Enabling/Disabling Telnet

To enable or disable Telnet on the ES-3810, select option 3, “Enable / Disable Telnet,” from the Manage Telnet Menu.

- - If Telnet is disabled, the following message is displayed: `Enable Telnet [Yes]?`
  - To enable Telnet, type `y` and press `<ENTER>`, or simply press `<ENTER>`.
  - To leave Telnet disabled, type `n` and press `<ENTER>`.
  - Next, press `<ENTER>` again to return to the Manage Telnet Menu.
- - If Telnet is enabled, the following message is displayed: `Disable Telnet [Yes]?`
  - To disable Telnet, type `y` and press `<ENTER>`, or simply press `<ENTER>`.
  - To leave Telnet enabled, type `n` and press `<ENTER>`.
  - Next, press `<ENTER>` again to return to the Manage Telnet Menu.

8.3 Modifying the Timeout Value

To change or disable the Telnet timeout value on the ES-3810, select option 4, “Modify Telnet Timeout,” from the Manage Telnet Menu. The following screen is displayed:

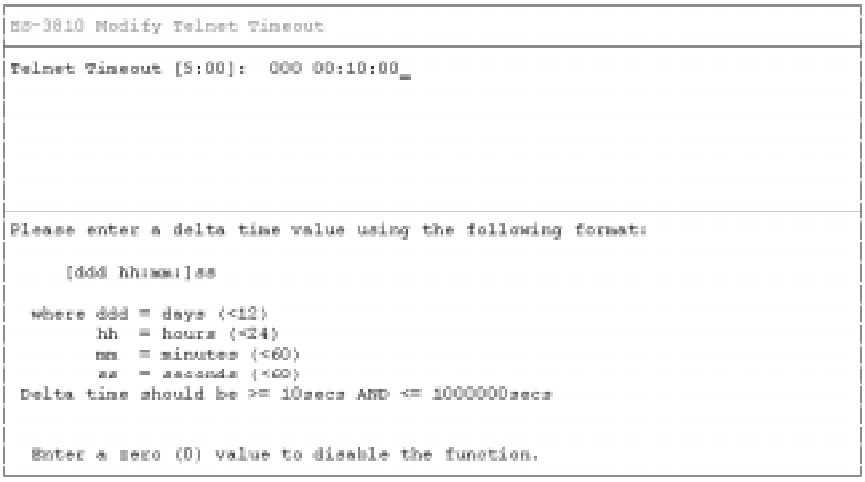

Figure 1 - Timeout Modification Screen

To change the Telnet timeout value, enter the new value according to the key in the lower portion of the screen. For example, to change the value to 10 minutes, enter `000 00:10:00`. 10 minutes can also be entered as `10:00`, or as `600` (seconds).

NOTE

To return to the Manage Telnet Menu without modifying the timeout value, press <ENTER> before entering anything else.

To disable the timeout feature altogether, enter `0` as the timeout value.

8.4 Returning to the ES-3810 Main Menu

To leave the Manage Telnet Menu, select option 1, “Return to Main Menu.”

9.0 Software Upgrade Procedures

This section details the procedures used to upgrade the operational software on the ES-3810. The software on the ES-3810 can be upgraded via TFTP or over the NMM's serial port.

The software upgrade procedures in this section assume that operational software version 4.1.1 is already running on the ES-3810. For upgrade procedures from prior releases, see the documentation that applies to the specific release.

9.1 TFTP Upgrades

This section provides information about performing a software upgrade via TFTP.

This section assumes that the ES-3810 being upgraded has already been configured with a proper IP address and subnet mask (see Chapter 5 of the *ForeRunner ES-3810 Configuration Manual*).

9.1.1 Obtaining the Software Upgrade File

You may obtain the software upgrade file from FORE Systems Technical Support. See Section 10.0 for information about contacting Technical Support.

9.1.2 Configuring the TFTP Server

After obtaining the TFTP upgrade file, place the file according to the specific instructions for the TFTP server that you are using.

The TFTP server should be on the same subnet as the ES-3810 being upgraded.

9.1.3 Performing the Upgrade

After placing the upgrade file, log on to the ES-3810 and perform the steps in the following two sections (see Chapter 1 of the *ForeRunner ES-3810 Configuration Manual* for more information about logon procedures).

9.1.3.1 Selecting the Software to Upgrade

1. From the Main Menu, select option 1, "Manage System."
2. From the Manage System Menu, select option 4, "Manage Software."
3. Ensure that `NMM System Software` is displayed in the upper right corner of the Manage Software Menu. If `NMM System Software` appears here, move on to Section 9.1.3.2. If `NMM Bootstrap Software` appears here, select option 3, "Select Another Software Module."
4. When the Software Selection screen appears, enter the number of the option that corresponds to **`NMM System Software`**.
5. After returning to the Manage Software Menu, ensure that `NMM System Software` appears in the upper right corner of the screen and move on to Section 9.1.3.2.

9.1.3.2 Downloading the Software

1. From the Manage Software Menu, select option 4, “Download Software.”
2. Carefully read the instructions that appear on the screen. Take special care to ensure the following:
   - the operational software is successfully backed up to RAM
   - the TFTP server and the ES-3810 are on the same subnet
3. If you are ready to perform the TFTP download, type **y** and press <ENTER>, otherwise enter **n**.
4. When prompted, enter the IP address of the TFTP server to which the upgrade file was copied / saved.
5. When prompted, enter the name of the upgrade file.
6. When the upgrade process begins, the DOWNLOADING... message appears.

If the download is successful, press <ENTER> when prompted and the ES-3810 will restart with the new software.

If the download fails (e.g., the upgrade file can not be found on the specified server), the current software image will be restored from RAM. Press <ENTER> to return to the Manage Software Menu.

9.2 Serial Port Upgrades

This section provides information about performing a software upgrade via the serial port.

9.2.1 Obtaining the Software Upgrade File

You may obtain the software upgrade file from FORE Systems Technical Support. See Section 10.0 for information about contacting Technical Support.

9.2.2 Configuring the Console Client

Once you have obtained the software upgrade file, ensure that you can access the file from the management console, then set up your terminal emulation package to run at 38,400 bps.

CAUTION

You must use the XMODEM transfer protocol for the serial download.

The following applications have been known to perform unreliably at times for the purpose of the serial port download:
- Terminal in Windows 3.11 and NT 3.5x
- HyperTerminal in Windows 95 and NT 4.0

A serial upgrade can be performed at 9,600 bps, but it may take as long as 30 minutes.

9.2.3 Accessing the NMM's Monitor

The serial port upgrade is performed from the NMM's monitor (i.e., MON960). Gain access to the monitor as follows:

1. While at the management station, power-cycle the ES-3810 (i.e., turn the power to the ES-3810 off and on again).
2. As soon as power is applied, continually strike the <ENTER> key until the MON960 banner appears, as shown below:

```
Mon960 User Interface: Version 4.0.2 Jun  7 1996
NMM; for i960 CA; CA stepping number 04
Copyright 1992, 1994 Intel Corporation
=>
```

9.2.4 Performing the Upgrade

After reaching the MON960 prompt, follow the steps below:

1. Enter the following at the MON960 prompt:

   => **ef app**

   => **ef cfg**

   The **ef app** command erases the portions of FLASH that contain the operational software. The **ef cfg** command erases the ES-3810 configuration file.

The **ef cfg** command is optional, but recommended, during a software upgrade.

CAUTION

Type the following command carefully. Entering the wrong string can render the NMM inoperable.

2. Enter the following at the MON960 prompt:

   => **do 6fde8000**

   This command prepares the NMM to receive the software upgrade file.

3. Send the new software image to the NMM from your console client according to the specific procedures for that client.
4. After the download is complete, enter **rs** at the MON960 prompt to restart the system.

   => **rs**

If the configuration file was erased (using the **ef cfg** command), the ES-3810 boots in Manufacturing Test mode. To restore normal booting, follow the steps in Section 9.2.5.

9.2.5 Restoring Normal Boot Operation

If the ES-3810 boots in Manufacturing Test mode (i.e., the unit's configuration file was erased during a serial upgrade), follow the steps below while in the Manufacturing Test Main Menu:

1. Select the "Modify Flex Boot Parameters" option.
2. Type **y** and press <ENTER> at the **Enable auto-execute [Yes]?** prompt.
3. Type **y** and press <ENTER> at the **Enable POST [Yes]?** prompt.
4. Type **n** and press <ENTER> at the **Enable manufacturing test mode [Yes]?** prompt.
5. When asked to confirm the settings, type **y** and press <ENTER>.
6. At the Manufacturing Test Main Menu, select the "Reboot System" option.
7. When asked to confirm the system reboot, type **y** and press <ENTER>.

The ES-3810 should restart using the new software image, perform its Power-on Self Test (POST), and present the logon screen. If not, or if you have any problems with the upgrade, contact FORE Systems Technical Support.

10.0 Contacting Technical Support

In the U.S.A., you can contact FORE Systems' Technical Support by any one of four methods:

1. If you have access to the Internet, you may contact FORE Systems' Technical Support via e-mail at the following address:

   support@fore.com

2. You may FAX your questions to "support" at:

   412-742-7900

3. You may send questions, via U.S. Mail, to the following address:

   FORE Systems, Inc.
   1000 FORE Drive
   Warrendale, PA 15086-7502

4. You may telephone your questions to "support" at:

   800-671-FORE (3673) or **412-635-3700**

Technical support for non-U.S.A. customers should be handled through your local distributor.

No matter which method is used for technical support, please be prepared to provide the serial number(s) of the product(s) and as much information as possible describing your problem / question.